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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,818	03/06/2002	James A. Frazier JR.	50847.00114	9406

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EXAMINER

ISSING, GREGORY C

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/091,818

Applicant(s)

FRAZIER ET AL.

Examiner

Gregory C. Issing

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 38-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 38, 42-44 and 46-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Constant.
3. The rejection is set forth in the last Office Action
4. Claims 38, 42-44, 46, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Goodwin et al.
5. The rejection is set forth in the last Office Action
6. Claims 39-41, 45 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Constant in view of either one of Boisvert et al or Drouilhet, Jr. et al.
7. The rejection is set forth in the last Office Action.
8. The Applicant argues that neither Constant nor Goodwin et al teach “means for generating a steering command . . . in accordance with the relative aircraft position of the first and second aircraft.” Applicant alleges that Constant teaches away from the claimed subject matter in light of teachings of Constant in col. 1, lines 58-65, wherein “the slaves calculate piloting orders.” The dependent claims stand or fall with the independent claim due to the Applicant’s statement that because claim 38 is in condition for allowance, all of its dependent claims are also in condition for allowance.
9. The Applicant’s argument is not convincing. Constant discloses a system for formation flying including a leader unit as well as a plurality of follower units. Each unit comprises measurement sensors that may include a GPS receiver (col. 4) for determining the absolute position of the respective unit. Additionally, each unit includes a communication

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Receiver/Transmitter for communicating with each of the other units, including the broadcast and reception of position information. As stated in col. 3,

In formation F<sub>j</sub>, leader helicopter L<sub>j</sub> determines both the route travelled by slaves E<sub>1</sub>, E<sub>2</sub>, and E<sub>N</sub>. Leader L<sub>j</sub> therefore also determines the spatial positioning of slaves E<sub>1</sub>, E<sub>2</sub>, and E<sub>N</sub> within the formation. The spatial positioning of the slaves relative to the leader has three components: 1) the distances between the leader and the various slaves DL<sub>j</sub>, 2) the bearing angles between a reference direction DR and the directions to the various slaves G<sub>j</sub>, and 3) the site angles from the leader to the various slaves S<sub>j</sub>.

Thus, the leader receives broadcasted position information from the slaves, determines its own position, and determines the relative positions of the units.

10. The leader subsequently transmits commands to the slave units (DT4, e.g.) that comprises commands for the formation; the commands for the formation include the commanded position, the commanded speed, the commanded heading and commanded altitude (see col. 8). The piloting orders are the combined results of: the relative command position for the given flight configuration, the relative real position of the helicopters in the formation, the heading, altitude and speed command coming from the leader, and the laws of pilotability applicable to the particular type of aircraft (see col. 9). The generation and transmission of the commands set forth above meets the scope of the claimed generation and transmission of “steering command” since the commands provided by the leader command the follower units to be steered to the appropriately determined locations. Thus, the applicants’ allegation that the claimed “steering commands” are not disclosed by Constant and that the disclosed “piloting orders” teaches away from the claimed subject matter are not persuasive.

11. The applicant merely states that Goodwin et al fail to disclose the “means for generating a steering command . . . in accordance with the relative aircraft position of the first and second

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aircraft.” Applicant fails to show how or why Goodwin et al do not show the above-noted claimed subject matter particularly in light of the fact that the Office Action states that Goodwin et al determines the relative positions of all of the follower aircraft in the formation and provides formation control signals via a data link. Formation/guidance control information is sent over the data link when performing maneuvers and formation flight and inherently meets the scope of the claimed “steering commands”. Therefore, the Applicant’s argument is not convincing.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

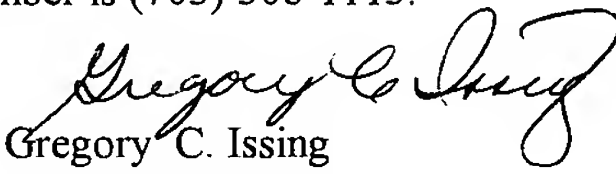
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (703)-306-4156. The examiner can normally be reached on Mon-Thurs 6:30-5:00.

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• If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703)-306-4171. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

  
Gregory C. Issing  
Primary Examiner  
Art Unit 3662

Gci